

# Missouri Department of Natural Resources



## PUBLIC NOTICE

### APPLICATION FOR MISSOURI STATE OPERATING PERMIT

DATE: November 5, 2004

In accordance with the state Clean Water Law, Chapter 644, RSMo, Clean Water Commission regulation 10 CSR 20-6.010, and the federal Clean Water Act, the applicants listed herein have applied for authorization to either discharge to waters of the state or to operate a no-discharge wastewater treatment facility. The proposed permits for these operations are consistent with applicable water quality standards, effluent standards and/or treatment requirements or suitable timetables to meet these requirements (see 10 CSR 20-7.015 and 7.031). All permits will be issued for a period of five years, unless noted otherwise in the Public Notice for that discharge.

On the basis of preliminary staff review and the application of applicable standards and regulations, the Missouri Department of Natural Resources, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions. The proposed determinations are tentative pending public comment.

Persons wishing to comment on the proposed effluent limitations and/or determinations are invited to submit them in writing to the Department of Natural Resources, Southwest Regional Office, Water Pollution Control Unit, 2040 W. Woodland, Springfield, Missouri 65807, ATTN: Cynthia S. Davies, Water Section Chief. Please include the permit number in all comment letters.

Comments should be confined to the issues relating to the proposed action and permit(s) and the effect on water quality. The department may not consider as relevant comments or objections to a permit based on issues outside the authority of the Clean Water Commission, (see Curdt v. Mo. Clean Water Commission, 586 S.W.2d 58 Mo. App. 1979).

All comments must be postmarked by December 5, 2004 or received in our office by 5:00 p.m. on December 8, 2004. The requirement of a signed document makes it impossible to accept email comments for consideration at this time. Comments will be considered in the formulation of all final determinations regarding the applications. If response to this notice indicates significant public interest, a public meeting or hearing may be held after due notice for the purpose of receiving public comment on the proposed permit or determination. Public hearings and/or issuance of the permit will be conducted or processed according to 10 CSR 20-6.020.

Copies of all draft permits, comments, and other information including copies of applicable regulations are available for inspection and copying at the department's website, [www.dnr.mo.gov/wpscd/wpcp/homewpcp.htm](http://www.dnr.mo.gov/wpscd/wpcp/homewpcp.htm), or at the Department of Natural Resources, Southwest Regional Office, Water Pollution Control Unit, 2040 W. Woodland, Springfield, Missouri 65807, between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.

Public Notice Date: November 5, 2004

Permit Number: MO-0130044

Southwest Regional Office

<b>FACILITY NAME AND ADDRESS</b>	<b>NAME AND ADDRESS OF OWNER</b>
USCOE, Nemo Lagoon WWTF Route 2, Box 2160 Hermitage, MO 65668	U.S. Army Corps of Engineers Kansas City District 700 Federal Building Kansas City, MO 64106-2896
<b>RECEIVING STREAM &amp; LEGAL DESCRIPTION</b>	<b>TYPE OF DISCHARGE</b>
Unnamed Tributary to Pomme de Terre Lake SW ¼, SW ¼, Sec. 17, T36N, R21W Hickory County	Domestic, new

Plans and specifications for this facility have been reviewed by the Department of Natural Resources. The design engineer, a registered Missouri professional engineer, has certified that the plans and specifications meet all requirements of 10 CSR 20-Chapter 8 Waste Treatment Design.

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**  
MISSOURI CLEAN WATER COMMISSION



**MISSOURI STATE OPERATING PERMIT**

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended.

Permit No. MO-0130044

Owner: U.S. Army Corps of Engineers, Kansas City District  
Address: 700 Federal Building, Kansas City, MO 64106-2896

Continuing Authority: U.S. Army Corps of Engineers, Nemo Park  
Address: Route 2, Box 2160, Hermitage, MO 65668

Facility Name: USCOE, Nemo Lagoon WWTF  
Facility Address: Route 2, Box 2160, Hermitage, MO 65668

Legal Description: SW ¼, SW ¼, Sec. 17, T36N, R21W, Hickory County  
Receiving Stream: Unnamed Tributary to Pomme de Terre Lake (U)  
First Classified Stream and ID: Pomme de Terre Lake (L2) (07238)  
USGS Basin & Sub-watershed No.: (10290107-050002)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

**FACILITY DESCRIPTION**

Outfall #001 – Recreational Park / Sewerage Works - SIC #7033 / 4952

No-discharge System

One cell storage lagoon / wastewater irrigation / sludge is retained in lagoon.

Design population equivalent is 72.

Design flow is 7,285 gallons per day (1-in-10 year design flow including net rainfall minus evaporation).

Design flow is 6,500 gallons per day (dry weather flows).

Design sludge production is 1.1 dry tons/year.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

\_\_\_\_\_  
Effective Date

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Stephen M. Mahfood, Director, Department of Natural Resources  
Executive Secretary, Clean Water Commission

\_\_\_\_\_  
Expiration Date  
MO 780-0041 (10-93)

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R. Bruce Martin, Director, Southwest Regional Office

## FACILITY DESCRIPTION (continued)

### Outfall #001 – Irrigation System Design

**Receiving Stream Watershed:** A gaining stream setting then into a classified lake.

**Facility Type:** No-discharge Storage & Irrigation System for seasonal business operating only during April through October and closed the remainder of the year.

<b><u>Design Basis:</u></b>	<b><u>Average Annual</u></b>	<b><u>Recreational Season</u></b>
		<b><u>(April through October)</u></b>

Design dry weather flows:	2,630 gpd	2,630 gpd
Design with 1-in-10 year flows:	3,487 gpd	3,487 gpd
Design PE:	36	

### **Storm Water Flows: (Hickory County)**

Average Annual Rainfall:	42.0 inches
1-in-10 Year Annual Rainfall:	54.6 inches
25-year-24-hour storm:	6.5 inches

<b><u>1-in-10 Year Flows:</u></b>	<b><u>Annual</u></b>
Runoff from concrete and roof areas:	3.6 ft
Runoff from earth areas: (lagoon berm, lots, etc.)	2.5 ft
Rainfall minus evaporation (R-E) on lagoon water surface:	1.8 ft

### **Cell #001**

<b><u>Lagoon Dimensions:</u></b>	<b><u>(Length x Width)</u></b>	<b><u>Surface Area</u></b>	<b><u>Depth from Bottom</u></b>	<b><u>Pump down depth</u></b>
				<b><u>(from spillway)</u></b>
Center Line Top Berm:	206' x 106'	21,836 sq.ft.	by <u>6.5</u> feet depth	
Inside Top Berm:	200' x 100'	20,000 sq.ft.	by <u>6.5</u> feet depth	
Emergency Spillway:	194' x 94'	18,236 sq.ft.	by <u>5.5</u> feet depth	<u>0.0</u> feet
Freeboard: (top berm to spillway):			<u>2.0</u> feet	
Maximum operating level:			<u>4.5</u> feet depth	<u>1.0</u> feet
Minimum operating level:			<u>2.0</u> feet depth	<u>3.5</u> feet
Aerobic BOD design basis:			<u>3.0</u> feet depth	
Storage volume (minimum to maximum water levels) <u>270,465</u> gallons				
Berm top width: <u>6</u> feet      Berm runoff area (Centerline to emergency spillway): <u>3,600</u> sq.ft.				
1-in-10 year annual storm water flows into lagoon (R-E): <u>41,825</u> cu.ft. ( <u>312,890</u> gallons)				

<b><u>Storage Capacity:</u></b>	<b><u>Average Annual</u></b>
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Design for dry weather flows:	<u>103</u> days
Design with 1-in-10 year flows:	<u>94</u> days

### **Land Application:**

Irrigation volume per year:	878,300 gallons (including 1-in-10 year flows)
Irrigation areas:	1.35 acres at design loading
Application rates per acre:	0.2 inch / hour; 1.0 inch / day; 3.0 inches / week; 24 inches / year
Field slopes:	less than 7.0 percent
Equipment type:	Sprinklers
Vegetation:	Grass land / timber
Application rate is based on:	Hydraulic loading rate

<b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>					PAGE NUMBER 3 of 7	
					PERMIT NUMBER MO-0130044	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u> – Emergency discharge from lagoon or irrigation sites (Note 1)						
Flow	MGD	*		*	once/day**	24 hr. estimate
Biochemical Oxygen Demand <sub>5</sub>	mg/L		45	45	once/week**	grab
Total Suspended Solids	mg/L		45	45	once/week**	grab
pH – Units	SU	***		***	once/week**	grab
Fecal Coliform	#/100mL	****		****	once/week**	grab
Ammonia Nitrogen as N	mg/L	****		****	once/week**	grab
Temperature (degrees)	C	****		****	once/week**	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE _____.						
<u>Outfall #001</u> – Land Application Operational Monitoring (Notes 2 & 3)						
Lagoon Freeboard	feet	*			once/month	measured
Irrigation Period	hours	*			daily	total
Volume Irrigated	gallons	*			daily	total
Application Area	acres	*			daily	total
Application Rate	inches / acre	*			daily	total
Rainfall	inches	*			daily	total
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE _____.						
<u>Outfall #001</u> – Irrigated Wastewater (Notes 4 & 5)						
pH – Units	SU	***			once/quarter	grab
Total Kjeldahl Nitrogen as N	mg/L	*			once/quarter	grab
Nitrate / Nitrite as N	mg/L	*			once/quarter	grab
Ammonia Nitrogen as N	mg/L	*			once/quarter	grab
Total Phosphorus as P	mg/L	*			once/quarter	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE _____. THERE SHALL BE NO DISCHARGE OF FLOATING OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- \* Monitoring requirement only.
- \*\* Monitor only when discharge occurs. Report as no-discharge when a discharge does not occur during the report period.
- \*\*\* pH is measured in pH units and is not to be averaged. The pH is to be maintained at or above 6.0 pH units.
- \*\*\*\* Comply with water quality standards per Special Conditions #5

Note 1 - No-discharge Facility requirements: Wastewater shall be stored and land applied during suitable conditions so that there is no-discharge from the lagoon or irrigation site. An emergency discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the 1-in-10 year 365 day rainfall or the 25-year-24-hour storm event.

Note 2 Records shall be maintained and summarized into an annual operating report, which shall be submitted by January 28<sup>th</sup> of each year for the previous calendar year. The report shall include the following:

- a. Record of maintenance and repairs during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year;
- b. The number of days the lagoon has discharged during the year, the discharge flow, the reasons discharged occurred and effluent analysis performed; and
- c. A summary of the irrigation operations including freeboard at the start and end of the irrigation season, the number of days of irrigation for each month, the total gallons irrigated, the total acres used, crops grown, crop yields per acre, the application rate in inches per acre per day and for the year, the monthly and annual precipitation received at the facility and summary of testing results.

Note 3 – Lagoon freeboard shall be reported as lagoon water level in feet below the overflow level. See Special Conditions for Wastewater Irrigation System requirements.

Note 4 – Wastewater that is irrigated shall be sampled at the irrigation pump or wet well.

Note 5 – Sampling shall occur once per quarter in the periods of January through March, April through June, July through September, and October through December, please note that monitoring reports shall be submitted no later than the 28<sup>th</sup> day of the month following the monitoring period (April 28<sup>th</sup>, July 28<sup>th</sup>, October 28<sup>th</sup>, and January 28<sup>th</sup>, respectively). For tracking purposes samples taken anytime in the first quarter (January through March) will be recorded by the department as though they were taken in March, samples taken anytime in the second quarter (April through June) will be recorded by the department as though they were taken in June, samples taken anytime in the third quarter (July through September) will be recorded by the department as though they were taken in September, and samples taken anytime in the fourth quarter (October through December) will be recorded by the department as though they were taken in December.

C. SPECIAL CONDITIONS

1. Report as no-discharge when a discharge does not occur during the reporting period.
2. Outfalls must be marked in the field and on the topographic site map submitted with the permit application.
3. Permittee will cease discharge by connection to area wide wastewater treatment system within 180 days of notice of its availability.
4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

C. SPECIAL CONDITIONS (continued)

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
  - (1) One hundred micrograms per liter (100 µg/L);
  - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
  - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
  - (4) The level established in Part A of the permit by the Director.
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule 10 CSR 20-7.031, including both specific and general criteria.
- (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
  - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
  - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
  - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
  - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
  - (5) There shall be no significant human health hazard from incidental contact with the water;
  - (6) There shall be no acute toxicity to livestock or wildlife watering;
  - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
  - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

6. This permit may be reopened and modified, or alternatively revoked and reissued, to:

- (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
  - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
  - (2) controls any pollutant not limited in the permit.
- (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.

C. SPECIAL CONDITIONS (continued)

- (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities

- (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
- (b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids that are removed from the domestic wastewater treatment lagoon during lagoon clean out and maintenance activities. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids from the lagoon. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

8. Lagoons and earthen basins shall have a liner that is designed, constructed and maintained in accordance with 10 CSR 20-8.020(13)(A)4. If operating records indicate, excessive percolation, the department may require a water balance test in accordance with 10 CSR 20-8.020(16) or other investigations to evaluate adequacy of the lagoon seal. The department may require corrective action as necessary to eliminate excess leakage.

9. Wastewater Irrigation System

- (a) Discharge Reporting. Any unauthorized discharge from the lagoon or irrigation system shall be reported to the department as soon as possible but always within 24 hours. Discharge is allowed only as described in the Facility Description and Effluent Limitations sections of this permit.
- (b) Irrigation Design. Permittee shall operate the land application system in accordance with 10 CSR 20-8.020(15). Permittee shall operate the land application system in accordance with the design parameters listed in the Facility Description section of this permit:

No-discharge System. When the Facility Description is "No-discharge", wastewater must be stored and irrigated at appropriate times. There shall be no-discharge from the irrigation site or storage lagoon except due to precipitation exceeding either the 1-in-10 year rainfall event for the design storage period or the 25-year-24-hour rainfall event.

- (c) Lagoon Operating Levels – No-discharge Systems. The minimum and maximum operating water levels for the storage lagoon shall be clearly marked. Each lagoon shall be operated so that the maximum water elevation does not exceed one foot (1') below the overflow point except due to any exceedance of the 1-in-10 year or 25-year-24-hour rainfall events. Wastewater shall be land applied whenever feasible based on soil and weather conditions and permit requirements. Storage lagoon(s) shall be lowered to the minimum operating level prior to each winter by November 30<sup>th</sup>.
- (d) Emergency Spillway. Lagoons and earthen storage basins should have an emergency spillway to protect the structural integrity of earthen structures during operation at near full water levels and in the event of overflow conditions. The spillway shall be at least one foot (1') below the top of berm. The department may waive the requirement for overflow structures on small existing basins.
- (e) General Irrigation Requirements. The wastewater irrigation system shall be operated so as to provide uniform distribution of irrigated wastewater over the entire irrigation site. A complete ground cover of vegetation shall be maintained on the irrigation site unless the system is approved for row crop irrigation. Wastewater shall be land applied only during daylight hours. The wastewater irrigation system shall be capable of irrigating the annual design flow during an application period of less than 100 days or 800 hours per year.
- (f) Saturated / Frozen Conditions. There shall be no irrigation during frozen, snow covered, or saturated soil conditions. There shall be no irrigation on days when more than 0.2 inches of precipitation is received or when there is observation by operator of an imminent or impending rainfall event.



C. SPECIAL CONDITIONS (continued)

9. Wastewater Irrigation System (continued)

- (g) Buffer Zones. There shall be no irrigation within 300 feet of any down gradient pond, lake, sinkhole, losing stream or water supply withdrawal; 100 feet of gaining streams or tributaries; 150 feet of dwellings; or 50 feet of the property line.
- (h) Public Access Restrictions. Public access shall not be allowed to the irrigation site(s). Fencing and public access restrictions to land application sites shall be in accordance with requirements in 10 CSR 20-8.020(15)(B)(5).
- (i) Equipment Checks During Irrigation. The irrigation system and application site shall be visually inspected at least once per hour during wastewater irrigation to check for equipment malfunctions and runoff from the irrigation site.
- (j) Operation and Maintenance Manual. The permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems. Copies of the O&M Manual and subsequent revisions shall be submitted to the departments' Water Pollution Control Program and the appropriate Regional Office for review and approval. The O&M Manual shall be reviewed and updated at least every five years.

DRAFT

